Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

Vol. 4. New York, June 2, 1849. No. 37.

THE
Scientific American.
THE
BEST MECHANICAL PAPER IN THE WORLD.
CIRCULATION 12,000.
PUBLISHED WEEKLY.
At 128 Fulton Street, New York (Sun Building,) and 13 Court Street, Boston, Mass.
By Munn & Company.
The Principal Office being at New York.
Barlow & Payne, Agents, 89 Chancery Lane, London

TERMS---$2 a year---$1 in advance, and the remainder in 6 months.

Poetry.

THE APRIL SHOWER.

BY CHARLES G. MACKAY.

Silently upon the earth
Falls the April shower,
Heralding the leaflets birth,
And the budding flower,
And the grass within the vale,
And the violet blue
Gladly tell the blithstome tale—
Spring hath come anew.

The vines that deck the garden wall,
Bless the April shower,
The springing plants both great and small,
Smile when skies do lower,
And the willows by the stream:
Silvery buds do show;
All looks like a fairy dream,
Where but late was snow.

Gladness to the maiden's heart,
Brings the April shower,
Thinking as the buds do start,
Of her latticed bower,
'Tis a joyous thought to one,
Pining to be free,
That the cold, dark storms are gone,
From the lake and sea.

Smilingly old Nature looks,
In an April shower;
Joyously the rippling brooks,
Chant the livelong hour,
'Tis a time of smiles and tears,
Hopes and budding flowers—
Like the tears of early years,
Are the April showers.

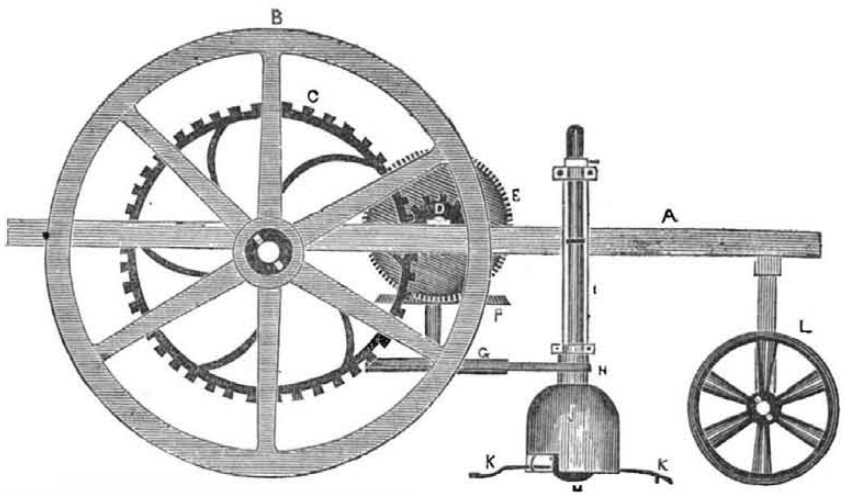
Abou Ben Adhem and the Angel.

Abou Ben Adhem (may his tribe increase!)
Awoke one night from a deep dream of peace,
And saw, within the moonlight in his room
An angel, writing in a book of gold:
Exceeding peace had made Ben Adhem bold,
And to the presence in the room he said,
"What writest thou?" The vision raised its head,
And, with a smiling look of sweet record,
Answered. The names of those who love the Lord.
"And is mine one?" said Abou--"Nay not so,"
Replied the angel. Abou spoke more low,
But cheerly still, and said, "I pray thee, then,
Write me as one who loves his fellow men."
The angel wrote and vanished. The next night
It came again with a great wakening light,
And showed the names whom love of God had blest,
And lo! Ben Adhem's name led all the rest!

The Button.

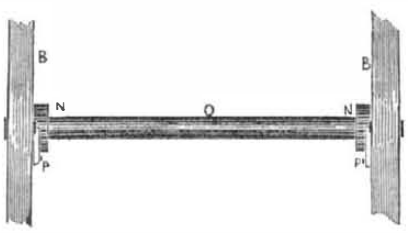
John, who is always too punctilious,
Got up one morning rather bilious,
And thus began to scold:
"Say, where's that button? you're a wife
To worry out a fellow's life—
How oft must you be told?"
But, madam, with a ready wit,
That cured her spouse's angry fit,
Cried, "dearest do not scoff
About that little button, John—
I really meant to put it on—
But then I—*put it off*."

GRASS CUTTING MACHINE.---Figure 1.



This machine is the invention of Mr. Wm. P. Vickery, of Danville, Goff's Corner, Me., who has applied for a patent. Fig. 1 is a side elevation and fig. 2 is a front view of the palls which gear the cutting machinery with the driving wheels of the wagon. The same letters indicate like parts on both figures. A, is one of the side poles or tram of the cart—one horse being sufficient to operate it. B, are the wheels, from the axles of which, as it is drawn forward, motion is communicated to the rest of the machinery. C, is a large toothed wheel on the shaft O, fig. 2. D, is a pinion on a transverse shaft placed between the two sides of the cart frame. The wheel C, meshes into D, and gives motion to the shaft

FIG. 2.



on which it is secured, which has a large bevel wheel E, secured upon it near the opposite side. This bevel wheel E, gears into a bevel pinion F, on a small vertical shaft projecting downwards and secured in a proper suspension bearing on the other beam A, on the opposite side of the cart. G, is a grooved pulley on this small vertical shaft from which passes a band around H, a small pulley or drum on the vertical cutter shaft I. This shaft is secured in proper suspension bearings attached to the nigh side of the pole A. On the lower end of this shaft I, is the cylinder or scythe stock J. Near its lower surface are secured one or more scythes K K, which can be taken out and put in easily. M, is a small friction wheel secured on the lower end of the spindle or shaft I, which by rolling on the ground or over stones raises up the shaft and scythes, thus accommodating the cutting parts to uneven ground, &c. L, are two guide wheels. They are secured on a central vertical spindle intersecting a small cross axle—they therefore turn on the vertical spindle like a swivel to guide the large wheels. The large wheels B, run loose on the shaft O, as represented in fig. 2. Upon the inside of the large wheels are two ratchet wheels N N, firmly secured to the axle. P P, are two clicks or palls united by pivots to the inside of the wheels B B. These palls catch into the ratchet wheels when the cart is drawn forward and thus the wheels B B, and the scythe gearing are geared together. But when the cart is pushed back the ratchets run over the teeth of the ratchet wheels and no motion is communicated to C, the large cog wheel.

High and Low Classes.

The following is from the Philadelphia Ledger. It is to the point, correct and frank.

"A high and low class" certainly do exist in all cities. But who constitute the high class? Why the orderly, the sober, the quiet the law-loving and the peace-preserving citizens, without reference to rich or poor. Were it otherwise, society could not hang together for an hour. Who constitute "the low class" but the law-breakers, the peace-disturbers, the riotous, the brawling inebriates and the incorrigible loafers. Not the poor, for there are at least as many poor among the sober and quiet portion of the community, as rich. The distinction of "high and low," in classes, when properly defined, involves no invidious sorcasm, ignominious degradation on the poor Who constitute the police? The poor. Who make up the ranks of the militia? The poor. If the Sheriff calls out his posse commitatus, who obeys the call? Not the rich but the poor. Who fight the battles of the country in war? The poor. Who produce property, and then protect it, but the poor? We have but two classes, the idle and the industrious, and the latter only discharge all the duties of good citizens.

Since the year 1810, 1,400 persons have been executed in England, for crimes which are no longer capital.

Course of Trade.

The Troy (N. Y.) Daily Whig notices as an interesting fact, the receipts by lake at Oswego, on the 17th instant, of 38 hhds. of sugar by the Mississippi lake route:

The first shipment of sugar from the Mississippi, via Oswego, it says, was made last season it being a small invoice for Syracuse. The first shipment of cotton for the New York market from the South, we believe, also took place last season. Considerable quantities are now coming forward by that route, as also hemp from Kentucky. The opening of the Chicago and Illinois Canal has created an important revolution in trade, so far as sugar and molases are concerned. Instead of making their purchases at New York and Philadelphia, the dealers on lake Michigan (who supply the back country in a wholesale way) now make their chief purchases at St. Louis. Southern sugar, by way of Cincinnati and Toledo, for two or three years has competed with the seaboard-purchased article in Buffalo and in all the upper lakes ports the trade from that direction is considerable. These things have not a little effect on "up freight" business propellers and vessels on the lake.

Germany is now engaged in the gigantic project of uniting the North and the Baltic seas. It can be done without locks.

RAILROAD NEWS.

Railway Jobbing in England.

On the 1st inst. Lord Brougham delivered in the House of Peers a philippic against the Railway system, the projectors, and all concerned. He denounced the gambling mania which gave vast powers to railway companies to promote the interest of a few, who did not care a straw if an inch of railroad was ever made, but whose object was to make plans and attorneys' bills, and the class of traffickers who erected princely fortunes on the ruin of private persons. In one session 519 railway bills were passed, and before five years Britain had invested nearly $800,000,000 in railway stock, paid up, while $742,000,000 remained due and payable. He instanced cases of knavery, and also of false balances made to deceive. Mr. Sanders, Secretary of the Great Western Railway Company, who had a salary of $14,850 a year, was in arrears for calls on his shares $80,000, while a poor widow was pounced upon the moment an instalment was due. A solicitor to the same company had also received $900,000 for land purchased by the company, though he had not produced a single deed. He had not a cent, but had not been sued lest the shares would come down! He named preference shares as another feature in the system of fraud, and explained the mode of manufacturing them. The Secretary and the Solicitor to whom he had alluded held preference shares. So long as they thought the shares good, and no calls were made upon them, they never dreamed that there was anything illegal or fraudulent in them: but the moment a call was made, they repudiated the shares.—His Lordship next charged Members of the House of Commons with having been bribed, either in money or shares, to expedite the passing of railway bills—stating that as much as £24,000 had been offered in one instance, and that by the judicious application of such monies, nothing was more easy than to bring down half a dozen members or more to vote upon a question which they had never heard debated. Not long since, the House of Commons had rejected a very stringent measure for the suppression of bribery. The only effectual means to prevent fraud and imposture, was to insist upon an absolute, unqualified, unsparing publicity to all railway transactions.

Narrow Escape of a Railroad Train.

The Boston Express came very near being thrown into the river, at New Haven, on Thursday of last week. Between 10 and 11 o'clock the locomotive ran off the track on the New Haven bridge, and was within two feet of going over, when its progress was happily arrested, and the lives of some hundred passengers preserved. After all danger had passed, the passengers became aware of their providential escape. Had they known their danger sooner, many would probably have rushed out of the cars and incurred more serious risks than that which they escaped from.

On the same day with the above, the morning train of the Rensselaer and Saratoga Railroad ran off the track, about seven miles this side of Ballston,—nearly killing Mr. Todd, the engineer, and severely injuring the fireman.

Erie Canal Steam Navigation.

The Central City (Syracuse,) says that a stout Canal boat with a load of 80 tons, propelled by steam, passed through that city last week going at good packet speed. It was propelled by a central wheel near the stern, of two feet in diameter. Canal steam navigation is not a new thing we believe on the Erie Canal, and far from being new on the Pennsylvania Canals.

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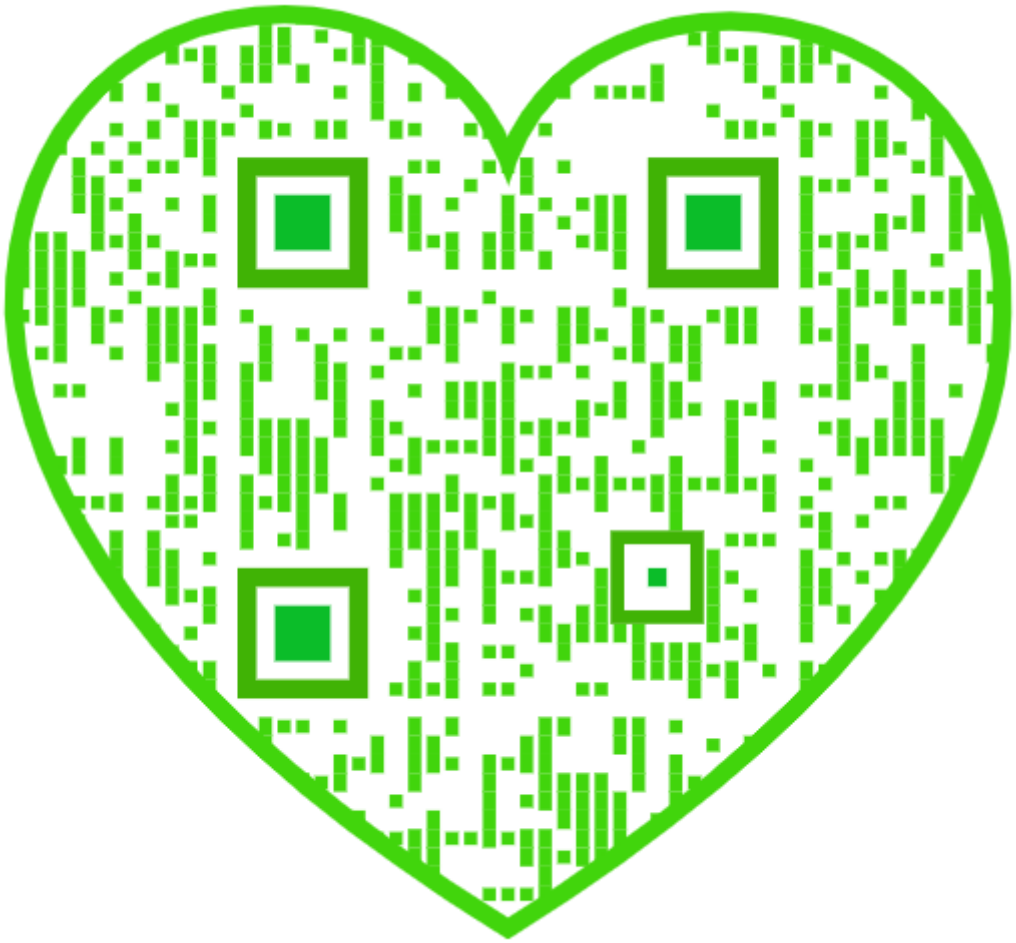

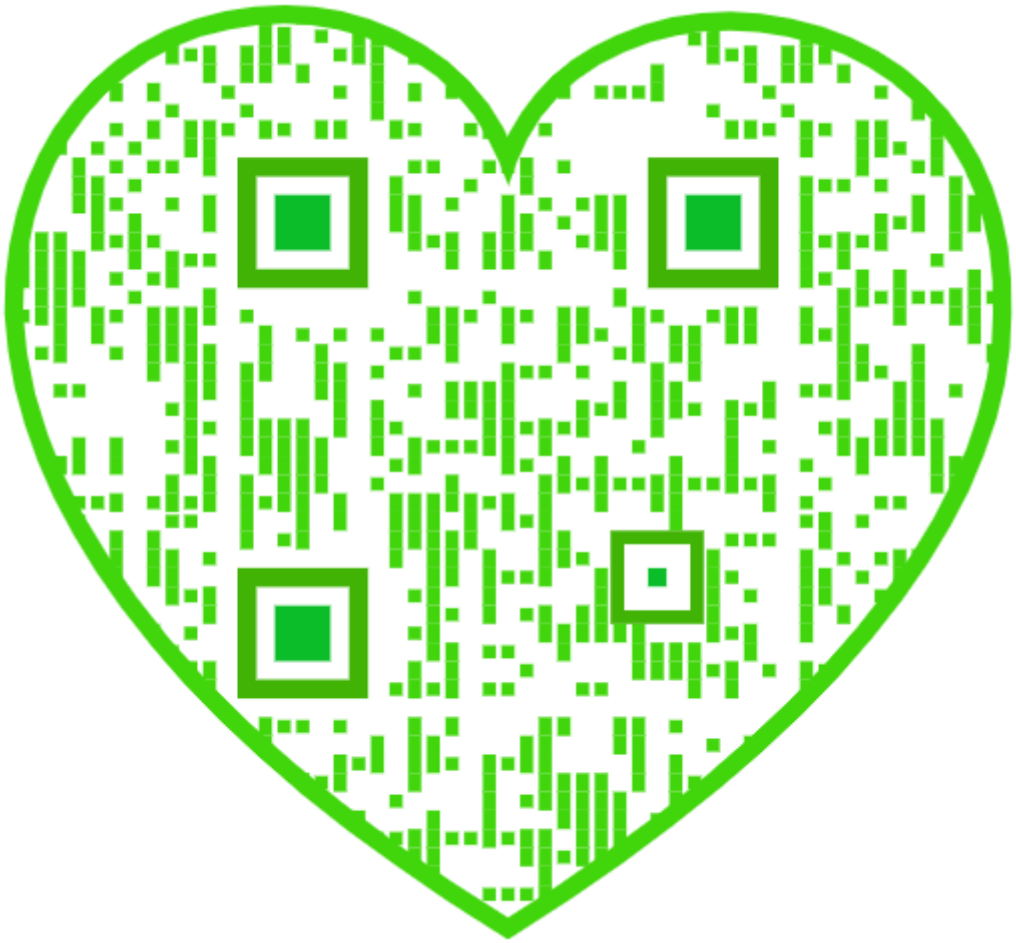

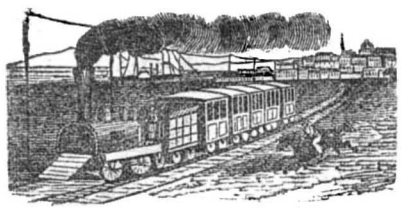

The Cholera in onr City.

Thus far, it may be said, that we have had no Cholera in New York.

The few cases which have occurred, said by some to be real Asiatic Cholera, is allowed by those capable of judging not to have been this disease. The malignant type, it certainly was not; cleanliness, better ventilation and better food, dispelled the disease from the quarters where it appeared, as if by the touch of a magician's wand.

Dr. Whiting, Health Officer at the Quarantine, Staten Island, in his report to the Board of Health, says:

Chloroform has been administered in a number of cases, carefully and repeatedly, and at first gave some hope that it would prove a successful remedy, but no other permanent good has resulted from its use but to relieve the spasms and cramps. For this purpose I have used it in all cases moderately, and if not a cure for all the symptoms, it is an invaluable remedy in subduing one of the most painful symptoms of the disease.

Among the grand preventatives of this disease are calmness of mind, cleanliness and simple accustomed diet

Health of the West, &c.

A friend out West writes us: "the Cholera has produced considerable alarm in some of the Western cities, principally those located on the banks of the Ohio river. Several of the line boats have laid up for a season, and the travel by water seems all but suspended. We had a heavy thunder-storm in Cincinnati on Saturday; no original cases are contained in our reports for Sabbath. Our dispatches from St. Louis up to the 17th, inst. exhibit an increase and well founded reports exhibit sad ravages among some of the California adventurers. Kanawha, where the celebrated Springs and Salt works are located, has suffered to some considerable extent. The Eastern (Virginia) masters have taken home their slaves, and some respectable individuals have become victims to the disease. Wheeling, Steubenville, Pittsburgh and other cities on the river, are still exempt from the scourge, and every sanitory measure has been made in operation as preventative.

Horace Greely, Esq., the energetic, self-made man of the Tribune, passed through Wheeling on Sabbath night week. He appeared tired and fatigued, but continued his journey to Cincinnati to attend the great Temperance Convention. Had it not been Sabbath he would have received a round of three cheers from his Wheeling friends. The Tribune is widely read around this section and though its readers and principal Editor don't go all the way on political points, still we venerate and respect the man who advocates sufficient and competent remuneration of manual labor. Horace does it, with his pen, and practically among his workmen."

Hon. Edmund Burke.

We learn by the Philadelphia Ledger that Mr. Burke is now associated with Mr. Ritchie in editing the Union at Washington. He can both wield a sharp pen and draw a long bow, and there is one thing we like about him, whatever difference of opinion may be expressed by others regarding his party predilections—he is frank and open in expressing them.

Mr. Thomas Ewbank of this city, it will be seen has been appointed commissioner of patents, at Washington, in place of Mr. Burke. Mr. E. is a most estimable man, of extraordinary acquirements and ability and perfectly familiar with the class of subjects with which his office is concerned. He has never been an active politician.—*N. Y. Cour. and Enq.*

The new commissioner of patents is thus spoken of by all who know him or are familiar with his reputation. The selection is hororable to the administration.—*Louisville, Ky. Journal.*

Isthmus of Panama.

The surveying party sent out to the Isthmus by Messrs. Aspinwall & Co. of this city, to select the best route for a railroad across the Isthmus, have been diligently engaged in their labors. A letter published in the Tribune says:

"The corps has been divided into four parties—two for the Chagres Division, and two for the Panama Division—each running distinct lines. By this organization, every advantage has been taken of the dry season, and although it was late when the party arrived out, yet the results show two separate and distinct lines from the Atlantic to the Pacific, nearly finished within a little more than two months.

One of the lines of the Chagres Division having been completed, the parties engaged on the same were sent, a few days since, to seek a third line on the Panama Division.

The two lines across the summit make the greatest elevation some 40 feet less than previous examinations. The highest grade over the summit, on one line, will not exceed 47 feet per mile, with a short tunnel; while the other line dispenses with the tunnel, but increases the grade to 66 feet per mile.

The total distance from Panama to the Terminus on the Atlantic is 46 miles. There will be required only one important bridge, all the rest will be small. The best and most desirable wood can be obtained on the line for the superstructure.

The surveys will be finished in four or five weeks, and if the same energy is exercised by the contractors for building the road, you may expect to see it completed in eighteen months, when I hope to be on my way home, and enjoying a steam ride across the Isthmus."

The Pine-Tree Insect.

Some weeks since, says the Wilmington Chronicle, we mentioned that the insect which was so destructive last year to the pine-trees in this, as well as other parts of the country had recommenced operations with the warm weather. We have recently, to our very great satisfaction, been informed that the snow of the middle of last month, had the effect, as is supposed, of checking the evil in a great degree, and in conjunction with another cause, will, it is generally supposed, arrest it altogether. This other cause is the appearing in immense swarms, of a large fly, which attacks and kills the tree insect. This may seem a strange statement, but it is, as we are assured by men of veracity, strictly true.

Railroad Sprinklers.

The New York and New Haven Railroad Co. are about to try the experiment of water sprinklers upon their road, by which one of the greatest annoyances of railway travel in the summer may be prevented. An engine with one or more large cars or tanks attached will run over the line twice each day, when necessary, and "lay the dust."—*Springfield Republican.*

[This is a good idea and one that has been carried out for two or three years past on the Providence and Worcester Railroad.

Lecture on the Inventive Genius of America.

We have received a copy of the above able lecture delivered before the Maryland Institute for the promotion of the Mechanic Arts, by Walter R. Johnson, Esq. the eminent Chemist. We intended to notice its principal features this week, but have been obliged to defer it till next week.

Notice.

Our friends will understand that we have constantly on hand, Minifie's Mechanical Drawing book, and all other mechanical works previously advertised in the Scientific American. We call attention to the advertisement of London Publications, conducted by Wm. Carpmael, Esq. They are very valuable.

A Great State.

Horace Greely writing from Ohio, says that sixty years ago the first white settlement was made in Ohio. She now has a population of two millions, and before the close of the present century, according to the present rate of increase, will have ten millions. Three fourths of Ohio is yet a forest. Her mineral resources are untouched, and manufactures are in their infancy.

Masters and Apprentices.

An interesting case, in which were involved the rights and duties of masters and apprentices, was decided in Lancaster, Pa., a few days ago. The Lancaster Union gives the particulars of the case, which are given as follows: In the Commonwealth vs. Humphery, it appears the defendant was a house carpenter by trade, and ordered his apprentice to saw and split wood, for household uses, in no way connected with the "art, trade or mystery" which the young man was bound to learn and the master to teach. The apprentice objected to cut the wood because the axe was out of order. The master undertook to enforce his authority by beating the boy with a stick—the boy resisted, and afterwards indicted the master for assult and battery. Judge Lewis charged the Jury—

1. That a master who takes an apprentice, for the purpose of instructing him in any particular art or trade, has no right to withdraw the time and attention of the apprentice from the proper business which he is to teach and the other to learn; and that the highly respectable condition of an APPRENTICE cannot be degraded to a level of a MENIAL, or mere FAMILY SERVANT.

2. That a master *house carpentär* has no right to direct his apprentice to *cut and split firewood* when such cutting and splitting of fire-wood has no connection with the "art, trade or mystery" of house carpenter.

Pimples on the Face.

Touch them with spirits of turpentine once in 6 hours and they will soon take themselves away. The same remedy, if applied early, will remove a sty from the eye-lid; and in nine cases out of ten, prevent biles if used in the first stages.—*Ex.*

[We should not like to try such remedies. It is no joke to touch the eyelid with spirits of turpentine.

Roman Archbishops.

The Baltimore Sun says that "in addition to the proposed elevation to Archbishoprics of three of the present sees, and the creation of a new Bishopric by this body lately in session here, it is understood that the Pope is also petitioned to make Primatial the metropolitan sees of Baltimore. A pastoral letter put forth by the Council recommends also to the American Church pecuniary collections in behalf of the Pope, and, by unanimous vote, urges that functionary to "define as an article of faith" the immaculate conception of the Virgin. Though this point has always been maintained by theologians of the Church, it has never been used as a positive dogma from Rome.

New Mode of Reefing Vessels.

S. Watts, jr., of Hallowell, Maine, has invented a method of bending, reefing and furling the sales of vessels, by which four men on the deck can furl or reef the main topsail with ease and despatch in the most violent gales. All the top sails also can be reefed, and the remaining canvas furled durthe time usually required to reef a single vessel. No men are sent aloft, and the danger of delay in a tempest, are alike avoided.

Theory of the Hair.

Dr. Holland has started a new theory with regard to the functions of the hair. He says it is a safety valve to the nervous system, forming a connection between the nervous organs and the great principles pervading the universe. He says the profuseness of hair is always proportionate to the prevailing vital energies.—Ex.

[The Doctor in all probability has a bushy wig. We are inclined sometimes to the very opposite opinion, "all hair and no brains."

The Sea Serpent, Thrilling Adventure.

The Boston Post says that there is a rumor in circulation that the clipper ship Sophia Walker, Captain Wiswell, was chased around Cape Horn by an enormous sea serpent, half a mile long, and that Captain Wiswell was so terrified that his eyes stuck out far enough to hang a Quaker's hat upon. In his eagerness to escape he wore out a new suit of sails, and made one of the best passages on record. We hope that he will make an accurate report, without appendix, of every particular relating to the interesting monster.

The South Pass.—Alkaline Water.—Rock Salt.—New Gold Mine.

The Liberty (Mo.) Tribune says: "Many of the way streams are so strongly impregnated with alkali that they dare not let their cattle drink. On the shores of many the crust is formed an inch thick. They break up this crust, scrape off the dirt on the bottom and top, and find it pure saleratus. Strange as this may seem, it is nevertheless true, and the writer collected in a short time 75 lbs. A mountain of pure rock salt has been discovered near the Mormon settlement. The Mormons have discovered a gold mine 150 miles southwest from the Salt Lake. The last end of the journey to the Salt Lake, say 200 miles, is attended with little fatigue. Nearly all the way the roads are as good as on any prairie in the West."

Astronomical Clock.

Dr. Locke, of Cincinnati, now in this city superintending the construction of his magnetic clock for the national observatory, has, during its progress, made some new philosophical and mechanical discoveries, and added some new improvements in relation to the pendulum and other parts of the clock.

A Yankee Egg Hatching Machine in France.

An American, Mr. Williams, has established himself near Paris, at Champigny, and organised there an "egg hatching manufactory" which is very successful. The French papers give the description of the apparatus for the hatching and feeding of the young chickens, and pronounce it very excellent. It is, anyhow, a discovery renewed from the Egyptians.

A Turtle in a Queer Place.

A frog was dressed at the Wm. Tell yesterday, says a Cincinnati paper, and a live snapping turtle was taken from its stomach! The turtle was near about the diameter of a dollar; and appeared to be laboring under no inconvenience, or to evince any gratitude towards those who released him from his prison, except a few snaps at the finger may be so construed. The turtle is now alive and doing well, but the frog has long since been consigned to an epicurean hecatomb.

The Russian Fur Company.

The Russian Emperor has granted a new charter to the Russian Fur Company of North America, but on condition that the company shall establish a line of transatlantic steamships. He has given four million roubles to assist in this project.

Planetary.

The Irish papers announce that Prof. Glukman is engaged in the construction of photographic apparatus, by which, with the aid of Lord Rosse's monster telescope, it is hoped, that delineations of the most distant planetary arrangements and movements may be obtained.

Drawings done by the Sun.

Mr. Langenheim, of Philadelphia, has recently made such improvements in Daguerreotyping, that he is now able to produce instantaneously upon paper, copies of any desired object with the utmost exactness.

The vote for the British Post Office Packet Service for 1849 is $3,730,000. One of the items is $1,160,000 for the West Indian Mails, the postages from which yield only $295,000. Mr. Bright represented the penny postage as a successful reform the importance of which could scarcely be overrated.

William A. Burke, Esq., agent of the Lowell machine shop, sailed in the America for Liverpool. His object is to obtain information in regard to machinery, locomotives, &c. He proposes to visit England, Scotland, Ireland, and France, examining all the works in these countries, and will return in the fall.

A patent, for the term of five years, has been granted to Don Juan Ramos, in Puerto Rico, for making sugar without leaving any molasses from the syrup.

Police officer John Burleigh, who was severely wounded by the mob at the late riot, died last week from the injuries he received.

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The Mineralogist.---The description and locality of every important Mineral in the United States.

(*Continued.*)

NITRATE OF LIME.

Occurs in fibrous efflorescences, of a whitish color; dissolves in water; and melts; tastes bitter; deliquesces. Abounds in the caverns of Kentucky.

SILICEOUS BORATE OF LIME. (DATHOLITE.)

Occurs in crystals and masses, of a greenish white or grayish color; shining lustre; specific gravity of 3. Translucent; fusible; forms jelly with acids; yields to the knife; turns white in the flame of a candle. Found at Hampden, Middlefield, Ct.; Paterson. N. J.

FLUATE OF LIME. (FLUOR SPAR.)

Occurs in crystals of a blue, purple, green, white, red, gray, or yellow color; also limpid and transparent. specific gravity 3.10. Lustre, shining vitreous; yields to the knife; fusible. With oil of vitriol it yields a gas which corrodes glass. Found at Thetford, Vt.; White Mountains, N. H.; Southampton, Mass.; Huntington, Middletown, Ct.; Amity, Saratoga Springs, N. Y.; Hamburg, Franklin furnace, N. J.; west side of Blue Ridge, Md.; Shephardstown, Shenandoah Co. Va.; Smith Co. Tenn., Peter's Cr. 17 miles from Shawneetown, Fork of Grand Pierre Cr. 27 miles from do. Ill.

FERRO-MAGNESIAN CARBONATE OF LIME.

Occurs in lamellar masses and crystals of a of a yellowish, grayish, or reddish white color; pearly lustre; specific gravity of 2.50.—Translucent; turns dark gray or brown when heated; Slowly effervesces in aquafortis. Localities: Leverett, Charlestown, Mass.; Bethlehem, Liecester, Clinton, N. Y.; near Lancaster, Pa

SULPHATE OF LIME.

Occurs in transparent crystals or foliated masses, of a white color, sometimes with shades of various colors; Specific gravity of 2.3. Soft; yields to the nail; turns white and finally melts when heated; does not effervesce with acids. Found at Milton, Martha's Vineyard, Mass.; Manlius, Lockport, Onondaga and Madison Cos., near Cayuga Lake, near Niagara Falls, foot of Goat Island, N. Y.; head waters of Staunton River, Saltville, on Holstein River, near Preston's Salt Works, Va.; near Fort Washington, Baltimore, St. Mary's Co., on the Patuxent, on the Potomac, Md.; Poland, Ohio.

BITUMINOUS LIMESTONE.

Color, dark brown; when heated exhales the smell of bitumen; loses odor and color by heat. Found near Middletown, Ct., presenting impressions of fish.

GRANULAR LIMESTONE.

Occurs in masses, of a white, gray, bluish, greenish, yellowish or reddish color; splintery fracture; brilliant lustre; translucent; often resembles loaf sugar. Found at Middlebury, Shaftsbury, Scranton, Pittsford, Vt.; Lanesborough, Stockbridge, Sheffield, Mass.; New Haven, Ct.; Philadelphia, Pa.; 50 miles above Washington on the Potomac, Md.

LINCOLNITE.

Occurs in crystals, of a white color. Translucent; whitens and melts by heat. It is found at Bellows Falls, Vt, and Deerfield, Mass.

LITHOMARGE.

Occurs in masses, of a reddish, yellowish, bluish, or grayish white; specific gravity of 2.2; fine grained texture; adheres to the tongue; soft; polishes with the nail; infusible; falls to powder in water. Found in Montgomery Co. Pa.; Bare Hills, near Baltimore, Md.

CARBONATE OF MAGNESIA.

Occurs compact, crystallized, earthy, and pulverulent; of a white, gray, or yellowish color. The compact variety adheres to the tongue; infusible; dissolves in oil of vitriol; yields to the nail; soft. Found at Staten Island, N. Y.; Hoboken, N. J.; Roxbury, Pa.; Bare Hills, near Baltimore, Md.

HYDRATE OF MAGNESIA.

Occurs in thin plates, of a white color; pearly lustre; specific gravity of 2.13. Soft; translucent; somewhat elastic; soluble in acids; slightly adheres to the tongue. Found at Hoboken, N. J. in veins traversing serpentine.

The whole of Europe at the present moment presents a prospect of general war.

The Mariner's Compass.

MESSRS. EDITORS.—I beg leave through the columns of your valuable paper, to call the attention of the public to the defects in the construction of this important instrument, as it is commonly manufactured. These defects are usually to be found in the box, in the card, in the spindle or pivot, and in the needle.

1st. The box, of what is called the light compass, is made of wood, which is often very slightly painted, or only stained with some water color; the consequence is, that as soon as it gets wet, or is ever exposed to a moist atmosphere, it swells and the compass splits and is thus rendered useless. The box should always be well painted with oil colors, or what would perhaps be better, be saturated with linseed oil and varnished with shellac varnish

The boxes of both the wooden and copper compasses are generally whitened on the inside with whiting mixed with a little size; the consequence of this method is that in a short time the size is dissolved by the moisture to which the compass is necessarily exposed, and a quantity of loose whiting is in the box, which injures the compass in three ways. 1st. it obscures the glass. 2d. it renders the said indistinct by getting on it; and 3d. it by getting in the cup and clogging up the pivot, prevents the needle from traversing freely.—The lubber mark being made with a lead pencil is often obliterated. Would it not be better to paint the inside of a compass with white lead, and make the lubber mark with black paint?

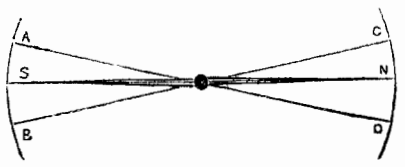
2d. The card is generally made of paper and pasted together and balanced by sticking sealing wax on the under side. This method of manufacturing compass cards has at least three objections. 1st The paste is decomposed by moisture. 2d. the balance of the card is often destroyed by the sealing wax dropping off in consequence of the destruction of the paste, and 3d, the card itself is sometimes destroyed by getting wet.

I would suggest, that instead of printing the points of the compass on paper that they be engraved on a thin sheet of metal, say copper or brass, or perhaps German silver or some other metal would be better. The proper parts would of course have to be blackened so as to render the points distinct.

3d. The pivot or centre pin is generally made of brass without a steel point, the consequence is that when it comes down again on the centre pin the point is turned into a hook, the needle is either prevented from traversing, or traverses very badly; and is as likely, if not more likely, to stop at the false point as the true one. The usual remedy for this accident on board ship is, to make the point with a knife; but the evil is only partially remedied by this method; for the point instead of being perfectly circular, is rendered (if I may coin a word) polyangular. The centre pin should always be pointed with steel which should work in an agate or glass cup. Cast brass is very objectionable for this purpose, in consequence of the number of air cells which are almost always to be found in it.

4th. The needle is often made rectangular. This form is very objectionable; it should always be avoided for the following reasons:—

Without entering into the different theories concerning galvanism, magnetism and electricity, which may be considered as the same thing under different forms, I shall consider the important and essential property of the needle, viz. its divertive tendency as owing to electricity. It is a well ascertained fact that this mysterious agent or fluid (call it what you will) is never absolutely at rest, it is never perfectly quiescent—attraction and repulsion appear to be its inherent properties. The magnetic needle when nicely balanced, is never perfectly at rest; even when well constructed it will vary in its direction; but when it consists of a rectangular bar, as it often is in mariner's compasses, it is liable to a very serious variation, as will be seen by inspecting the drawing, bearing in mind the constant tendency of the electric or magnetic fluid to separate its different powers, or in other words its poles, so far as the nature of the apparatus will permit. Thus, when a compass is first made, the line of direction is N. S., but it may change to the line A D, in consequence of the point A. becoming the North pole instead of the point N, or B, may become the South pole and C, the North. That these



changes sometimes do take place I have no doubt, and have probably caused the loss of many a vessel. They may have been the cause of the loss of the steamer Great Britain. I detected the change of the line of deviation once in a needle of this form. I magnetized it very strongly by means of an electro magnet.—When the compass left the shop, the line of direction was parallel to the sides of the bar, but when the captain returned from a trip down the river, he complained that his compass had run him out of his course. I examined the compass, and found that the line of direction was diagonal. I destroyed the magnetism of the needle by reversing the poles and re-magnetized it with permanent magnets. I have had no complaint of this compass since.

The navigators on board of a vessel would be able to detect such an important change.—But the compass is left for hours in charge of the seamen, who generally are unable to detect the errors in it. The compass is at best an uncertain and fallacious guide.

Yours, &c. JOHN PRIME.

Washington. N. C.

The Mississippi Overflows.

The New-Orleans Crescent of the 11th inst. has an article, brief and terse, upon the overflows of the Mississippi, wherein are some reflections upon the means of counteracting these yearly inroads. Hitherto, it says, the principal means of protection has been Levees,—in themselves rude instruments for controlling water, and during any extraordinary rise of the River are but weak agents for keeping it within its banks. It behooves us then, to consider whether at the present day, our scientific knowledge and social advancement do not furnish us with more effectual means than Levees for controlling the course and movements of the Mississippi.

It seems to us that the Mississippi is a Samson that must be shorn of his locks before you take away his power to injure. It must be overcome by cunning and skill rather than by force and violence. It is not by throwing up barriers and attempting to resist the river that you can most effectually restrain its power. A better plan would be to divert its energies into many channels, weaken it by division, and then permanently deprive it of its fearful and destroying qualities. Able engineers have at various times suggested plans to the Legislature for turning a part of the waters of the Mississippi into artificial canals running from the river to the lake. And this seems to be the course pointed out by nature as well as by common sense for relieving the pressure on levees during high water. The bayous which carry off a portion of the waters of the Mississippi, are hints to Man for using similar artificial contrivances for effecting the same end. In the same way you relieve an apoplectic man by opening a vein and letting off the blood which presses on his brain, so by opening communications from the river to the lake you take off the water which would otherwise burst through the banks that tremblingly attempt to hold it, and relieve the country from the continual fear of the overflow and inundation. Nor would the work be difficult, or expensive. The river being several feet higher than the land between it and the lake, it would only be necessary to raise embankments and tap the levee in order to take off the water. The only danger in such an operation would be that of taking too much water from the main channel. Hence it would be necessary to have the work superintended by men thoroughly scientific and practical.

Mr. Layard, the Ninevite Antiquarian, has been appointed an attache of the British Embassy at Constantinople, with $1,250 a year, and the British museum has voted him $15,000, to assist him in further researches.

Physical Advantages of the Sabbath.

The following extract from the North British Review, should at least be read by every working man.

The Sabbath is God's gracious present to a world, and for wearied minds and bodies it is the grand restorative. The Creator has given us a natural restorative—sleep; and a moral restorative—Sabbath-keeping: and it is ruin to dispense with either. Under the pressure of high excitement, individuals have passed weeks together with little or no sleep; but when the process is long continued, the over-driven powers rebel, and fever, delirium and death come on. Nor can the natural amount be systematically curtailed without corresponding mischief. The Sabbath does not arrive like sleep. The day of rest does not steal over us like the hours of slumber. It does not entrance us almost whether we will or not; but, addressing us as intelligent beings, our Creator assures us that we need it, and bids us notice its return and court its renovation. And if, going in the face of the Creator's kindness, we force ourselves to work all days alike, it is not long till we pay the forfeit.

The mental worker, the man of business or the man of letters, finds his ideas becoming turbid and slow—equipoise of his faculties is upset—he grows moody, fitful and capricious; and with his mental elasticity broken, should any disaster occur, he subsides into habitual melancholy, or in self-destruction speeds his guilty exit from a gloomy world. And the manual worker, the artisan, the engineer—toiling on from day to day, and week to week, the bright intuition of his eye gets blunted, and forgetful of their cunning, his fingers no longer perform their feats of twinkling agility, nor by a plastic and tuneful touch mould dead matter or wield mechanic power; but mingling his life's blood in his daily drudgery, his locks are prematurely gray, his general humor sours, and slaving it till he has became a morose or sullen man, for any extra effort or any blink of balmy feeling he must stand indebted to opium or alcohol. To an industrious population, so essential is the periodic rest, that when the attempt was made in France to abolish the weekly Sabbath, it was found necessary to issue a decree suspending labor one day in every ten. Master manufacturers have stated that they could perceive an evident deterioriation in the quality of goods produced, as the week drew near a close, just because the tact, alertness, and energy of the workers began to experience inevitable exhaustion.

When a steamer on the Thames blew up, a few months ago, the firemen and stokers laid the blame on their broken Sabbath; it stupified and embittered them, made them blunder at their work, and heedless what havoc those blunders might create. And we have been informed that when the engines of an extensive steam-packet company, in the South of England were getting constantly damaged, the mischief was instantly repaired by giving the men what the bounty of our Creator had long before—the rest of each seventh day. And what is so essential to industrial efficiency, is no less indispensable to the laborer's health and longevity.

Young Men.

It should be the aim of young men to go into good society—we mean not the rich, nor the proud, nor the fashionable, but the society of the wise, the intelligent, and the good.—When you find men that know more than you do, and from whose conversation you can get information, it is always safe to be found with them. It has broken down many a man to associate with the low and vulgar, where the ribbald song was sung, and the indecent story told to excite laughter or influence the bad passions

Lord Clarendon attributed success and happiness in life, to associating with persons more learned and virtuous than ourselves. If you wish to be wise and respected, if you desire happiness and not misery, we advise you to associate with the intelligent and good. Strive for excellence and strict integrity, and you will never be found in the sinks of pollution, or in the ranks of profligates and gamblers.—Once habituate yourself to a virtuous course, and no punishment would be greater than, by accident, to be obliged, for half a day to associate with the low and vulgar.

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New Inventions.

Improved Water Wheel.

Mr. Caleb Rider, of Plymouth, Mass., has recently made some valuable improvements on Horizontal Water Wheels. From experiments made before a great number of competent witnesses, the wheel gave a per centage of 13½ over a good breast wheel. Good mechanics and millwrights were witnesses to the trial and they were exceedingly pleased with the results. One of Mr. Rider's wheels is in successful operation in Middleboro, and two of his wheels 5 feet in diameter have been set in operation at Plymouth. They are capable of running well under water and by the favorable practical results exhibited they will no doubt soon be extensively introduced and adopted. Mr. Rider manufactures the wheels himself and can furnish different sizes at a very short notice.

New Loom Picker.

Mr. Geo. W. Perry, of Fall River, Mass. has invented a new mode of combining and operating a Picker for Power Looms, which we consider to be a valuable improvement in the weaving art. The picker is made to move continually in a straight line in the raceway of the lathe, obviating the use of the common horizontal spindle on which the picker runs and at the same time it is much easier taken out and put in—more simple and can be constructed at less expense than any contrivance of the same nature for driving the shuttle, that we have seen.

The picker is made of a rectangular form to slide on the raceway freely in the shuttle box. It has an opening through the middle of it through which passes the picker staff, driving the picker by moving reciprocally in a longitudinal slot cut in the raceway of the shuttle box. The picker staff is not secured to the picker, but merely having its upper end pass freely through it. A flange is secured on the top of the shuttle box projecting inwards, which prevents the picker from being raised up. The picker staff has a reciprocating motion from a pivot axis below at its bottom, by which it is secured to a vertical standard attached to the shuttle box. The top of the picker staff therefore describes considerable *arcs*, but as it passes freely through the picker it moves it in a straight line with but very little friction, especially as the ends of the opening of the picker are made of a curved form, which allows the picker staff to roll in it, yet move the picker according to the parallel motion of Watt. The picker staff may also be dispensed with, owing to the form of the picker, and a simple tennon secured to the same by passing down and being connected to a central wag staff by a cord, may answer every purpose in a more simple manner, with but a little more friction. Mr. Perry has taken measures to secure a patent. One has been in operation at Fall River for some time and has given great satisfaction.

Machine to Measure a Ship's Velocity.

Mr. Arthur Huston, of Bristol, Maine, has invented a very simple machine which on deck or cabin, or any convenient place points to a register marked with degrees to indicate the number of knots the vessel is making per hour or half hour. The principle of it consists in a lever with a blade on its lower end, passing down on both sides of the keel as a resisting medium to the water, which by a graduated spring on the upper end of the lever moves the lever backwards and forwards according to the pressure of the water and by having the pointer on the upper end, the velocity of the vessel is thus indicated on the dial. Two or more pointers may be placed in different parts of the vessel, connected to the top of the lever by wires to register the velocity in different parts of the vessel at the same time. Measures have been taken to secure a patent.

Portable Tongueing and Grooving Machine.

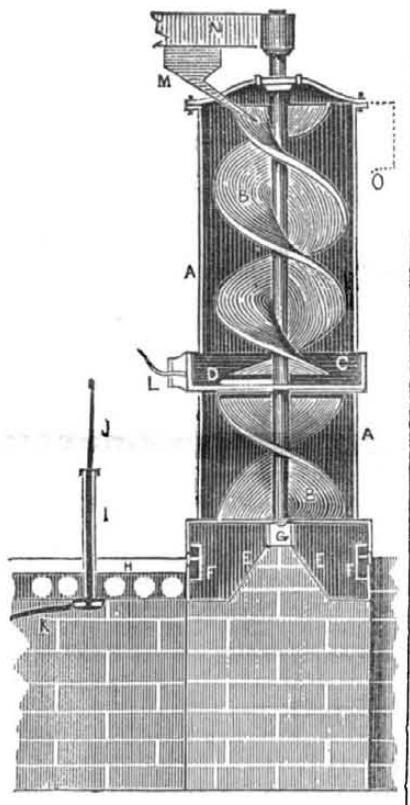
Messrs. Hiram Rousseau and D. M. P. Haines, of Richmond, Wayne Co., Ia., have invented a very convenient portable tongueing and grooving machine for small work in joiner shops, to be operated by hand.

The cutters are set upon vertical wheels and the beam is secured in the frame, the cutter wheels moving on the frame from one end to the other. Two smoothing chisels on the frame finishes the matching of the board in a complete manner, and the action of the knives on the edge of the board moves the centre frame along its whole length as if biting their way and doing their work by the same motion. Measures have been taken to secure a patent.

New Fountain Pen.

Mr. E. Jordan, of West Cummington, Mass., has made an improvement on the Fountain Pen, whereby the ink is supplied continually in the same quantity from the fountain independent of the quantity in the fountain, for, if there is any ink in the fountain at all, it will be transmitted to the pen in a gradual even stream. The fountain is contained in the case and there is a small conveyer communicating with it to the pen trickling the ink in a fine, constant even thread.

Screw Brick Machine.

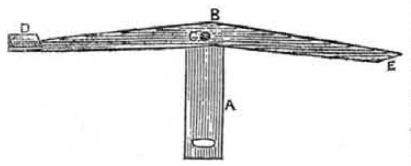


This mode of making brick is the invention of Henry Franklin of the county of Bedford, England; by it bricks, tiles and other like articles may be made. The machine consists of a cylindrical pugging and discharging screw, together with screening frames, and moulds or dies and a cutting apparatus, all performed nearly at one operation. A, is the screw chamber which is divided near the centre by a rectangular case. B B, is the screw revolving on a vertical shaft, in a proper bearing G, at the foot of the chamber, and is protected by an outside collar. C, is a screen or division plate through which the clay is forced by the downward pressure of the screw. D, is an eccentric cam revolving with the screw on the same shaft, causing stones, straws, &c. to be cleared away, at each revolution of the shaft, into the angular corners of the case C, and from thence by two side doors at L, carried away into very suitable receptacles for the same. E E, is the moulding or die chamber with slanting step backs or inclines. F F, are moulding dies of the common construction, and may be of many forms. H, is an endless web supported on a series of rollers, upon which the moulder's clay as it leaves the die is carried forward to be cut into given lengths. I, is the cutting apparatus consisting of an upright standard with sliding frames J, across which are stretched two or more strong wires, for cutting the pressed and moulded sheets of bricks into their proper lengths.

These cutters are worked by the hand lever K. M, above is a cistern or trunk for supplying water to the screw, to prevent the clay from sticking to it. N, is the section of the driving lever, for a horse to turn the screw, in the usual pugging or tempering process, for the moulds. This lever is keyed to the screw shaft. O, is an opening at top by which the clay is fed into the screw. The operation of this machine must be obvious to all, the clay is forced down and pugged by the screw B, and screened by the plate C, the screw forces the clay down and out through the stationary dies with a great pressure, and it is then received on the revolving endless web and cut into proper lengths.

Improved Self-acting Jaw Temples for Power Looms.

Fig. 1.



This is a *self-acting* Hinge Jaw Temple for Looms, invented by Messrs. Lippett & Jillson of Wonsocket, R. I. who have taken measures to secure a patent for the same. We here present three views of it. Fig. 1 is a vertical view, fig. 2 a horizontal view, and fig. 3 a section showing the Jaw of the Temple thrown open. The use of Temples in power looms, is to keep the woven cloth stretched to its full width to the action of the slay or reed. The old Temples are a pair of bars joined together at the middle by a button, which has to be turned from time to time, and the Temples shifted forward, spreading out the woven cloth by pins on the end of each bar which are inserted inside of the selvage. It is surely economy to have Temples that shift themselves. Self-acting Temples are not new, but so far as we know, there has been no lifting Jaw Temple used before.

Fig. 2.

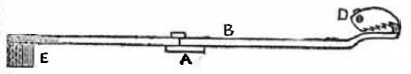
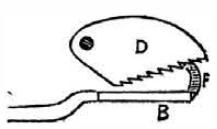


Fig. 1 shows the form of the Temple bar B, attached by a pivot C, to vibrate on the bar A, which is secured on the beam. D, is the jaw of the temple. It is secured by a pivot to a small upraised bent arm F, fig. 3, and receives a slight touch on the flaunch E, which projects below it. The web passes through the jaw in the position as represented by fig. 2. Thi stemple is for the right hand side of the web, and as the reed is driven up, the jaw D, by the vi-

Fig. 3.



bration and the spreading out of the warp, opens up and allows the cloth to be slightly moved upon the web beam. Whenever the reed begins to recede the jaw by its own gravity drops down and keeps the cloth spread out to its fullest extent The jaw is made of metal and is serrated on its face to hold the cloth out towards the selvage. This temple makes a beautiful selvage, and it is very simple. It is certainly far superior to another that we have seen, which has a wedge spring on it to open up the jaws.

Improvement on Apparatus for Hoisting Brick and other loads on Buildings.

Mr. G. W. Warner, of Springfield Mass., has made some very valuable improvements on apparatus which is specially adapted for builders in the erection of houses. It is altogether superior to the clumsy apparatus now in use for that purpose. It has double arms and is capable of raising a full bucket on one side while the empty one is descending on the other. It is erected on the street and occupies but little room.

The arms can be raised or elevated on the main pole, to dump the buckets on the first, second, or third stories or to any point on the scaffold. Three men to attend it would do more than ten laborers climbing up the ladder with hods, one of the most severe and grinding kinds of labor to which men can be subjected. One man to turn the crank, one to fill the buckets below, and another to dump them above are all the hands that are required. This is a valuable improvement and Mr Warner has taken measures to secure it by Patent.

Discovery in Preserving Butter.

In No. 32 we stated in reference to a new mode of making butter, said to have been discovered by Mr. E. H. Merryman, of Springfield, Ill., "that there was no other way to do this than by hermetically sealing it in an air tight vessel or using some chemical preserving agent."

Mr. Merryman has wrote us a letter stating that his discovery is entirely new, and that it will make butter which will keep fresh exposed for a long time to the atmosphere. Mr. Merryman's invention consists in separating the casein formed in butter (by mechanical means,) and remove the prime cause of rancidity or decomposition.

This is certainly a very important and valuable invention to our whole country—and one which we had thought morally impossible, and never looked to a chemical separation by mechanical means.

The Tartars of the Crimea separate the casein by melting the butter over a slow fire and removing the scum as it rises, and by keeping butter in a melted state in a water bath at 180° until the caseous matter subsides to the bottom, a butter will be produced that will keep sweet for two years. But these processes are tedious and unless carefully performed butter will be spoiled. The invention referred to obviates all these objections in a very simple manner, and we hope to be able to present an illustration of it at some future period.

New Churn Dasher, and Ice Cream Freezer.

Mr. M. M. Boyes, of Jersey City, N. J., has invented a churn dasher, which answers the purpose of an Ice-cream Freezer also. The dashers are triangular, forming a series of six angular, but three triangular paddles. These are hollow and form a case open at one end to receive ice cream to be frozen therein, when required. A tight cap secures the cream inside. When desired to be used as a churn the hollow case is quite light and the arm or paddle throws the cream from one to the other, agitating it in the most complete manner, and it produces butter in as short if not shorter period than any rotary churn that we have ever seen.

The hollow triangular dasher for the purpose we have stated, is a new feature in this apparatus, for which Mr. Boyes has adopted measures to secure by patent.

New Nail Feeder.

Mr. John Sheets, of Harrisburg, Pa., has invented improved machinery for turning and feeding the nail plates into the nail machines in a manner never before attempted. He has taken measures to secure a patent for his invention.

Mr. J. E Smith of this city, (says the Railroad Journal) proposes a new plan of lessening the friction on Railroads by placing vulcanized india rubber under the rail.

Patent Swindling.

The Muscogee Democrat, Columbus, Geo. alluding to our Prize Essay on the Patent Laws says: "We would have been pleased had it gone a step further, and shown the best plan by which the Patent Office shall be prevented from issuing patents for things of no value, and and how the public can be protected from the extensive game of swindling which has of late been carried on in *patent* "humbugs!" For an Essay that had exposed all the tricks of patentees, and thus guarded purchasers from imposition, we could ourselves have paid $500, and made money by the operation!"

[It is something inexplicable to us how any poor patent article should deceive people. It is not the name of *patent* that should give any thing its *value*, but the real worth of the article or machine itself. We do not believe that the inhabitants of Georgia are less clear sighted in making bargains than any other people.

By an oversight, we forgot to mention in No. 35, that Woodbury's Grain Separators and Horse Powers were manufactured by J. & D. Woodbury, Rochester, N. Y.

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NEW YORK, JUNE 2, 1849.

Cast Iron Houses.

The late disastrous fires which have occurred in various cities and villages in our country, suggests to us, with warning voice, the propriety of providing, as far as possible, against the frequent occurrence of such misfortunes. One prominent cause of severe and destructive fires in our country is, the great amount of wood material used in our buildings. The timber employed in buildings soon becomes like tinder and spreads along from board to beam, when once ignited, with almost electric speed. Even in our cities, in streets where we behold beautiful stone and brick fronts, we too often find the rear and outhouses composed of the most inflamable materials. It is our opinion, and we have expressed it before, that iron is yet destined to play a most important part in public and domestic architecture. Cast iron is cheaper than stone. It can be moulded into every variety of form for beauty, grace and just proportion, both for strength and economy of space. It would not be like old wood, or brick or stone either. After it had served its day and generation, and some more fashionable design was desired by the owner, to replace what might be considered "antiquated," it then has its value, although it be a thousand years old. It can again be taken to the foundry and become changed from the merely economical form and proportions, to the "sublime and the beautiful" in architecture. This branch of architecture is a new one in our country; but very few cast iron buildings have yet been erected, and these have been confined we believe to this city. The pioneer, the designer and contractor of all these works is the ingenious Mr. James Bogardus of No. 40 Eldridge st. The iron stores of Mr. Lang on Washington st. are his designs, and so are those now erecting on the corner of Centre and Duane streets.

Of course this branch of architecture, must present some very different features from any other branch, such as the manner of tieing the beams, the way of supporting them, and also of keying together the different parts.—One thing is certain, no mortar is used to cement them together, but they are united by bolt and screw, and can be again taken apart, to be marched off in short notice to California or some other ilk. Iron houses then have great advantages over every other kind—and they will no doubt soon commend themselves to general favor.

Mechanical Powers.

There is a great deal of ignorance among all classes respecting Mechanical Power.—Some believe that a great power is gained by an increase or multiplicity of levers, wedges, screws, &c. The mechanical powers are generally embraced under six heads, viz. the lever, the wheel and axle, the pulley, the inclined plane, the wedge and the screw. There are some people who think that there is something magical in these mechanical contrivances to create a great power. It is true that in the hands of the ingenious and the skillful wonders to the ignorant have been performed by the combination of the lever and screw, or the other mechanical combinations. Houses have been lifted from their foundations by a few screws and levers. Ships have been transported over mountains by a few rollers and levers, and lofty columns have been elevated by the lever, pulley, wheel and axle. It is no wonder then that the ignorant who saw these things done, or see them done every day, think that there is something mysterious in those mechanical contrivances to accomplish their more than Herculean feats of strength and power. In works on the mechanical powers, each power is generally treated under a separate head. but the principles of all of them are the same. "every pressure acting with a certain velocity, or through a certain space, is convertible into greater pressure when acting with a less velocity, or through a smaller space but the quantity of mechanical force is unchanged, and all that the lever or wedge or screw accomplish, is simply a transformation of power. There is no power gained by a lever, the power is merely put into another shape. A man can lift twice as much with a lever 20 feet in length as he could do with one 10 feet in length, but then he would just take twice as long to do this. In this nutshell lies the whole principle of the mechanical powers. A pound weight will balance a pound weight and no more. There are some men who imagine that they can gain power by complicated mechanical contrivances. Many an ingenious plan of wheels, springs, and levers have we seen, to create a self-acting mechanical power—a perpetual motion. But of all the many ingenious contrivances that have been invented for this purpose, not one is now in existence. We have had a great number of letters sent to us, relative to such powers, but we have universally advised the projectors to spend no time or money on such chimerical objects. Whatever is gained in power by mechanical combinations, is lost in velocity. The power of any machine is measured by its force and velocity combined, and the data of a horse power in steam engines or any other prime mover is the capacity of lifting 33,000 lbs. one foot high in a minute. Here we have the velocity and force, and if we double the velocity we only get 16,500 lbs. lifted one foot high in half a minute. This is a familiar solution of the principles of the mechanical powers We think that it will be the means of saving some of our correspondents time, trouble and expense, at least that is our object. It is part of our duty to explain things new and old. The correct principles of science are old, and yet are ever new.

Medical Errors.—Seasonable Medicines.

There are a great number of people who believe that they must take a certain quantity of medicine at regular intervals. It has long been a popular notion that every person would be the better of taking physic in the spring. Salts have been generally considered the best medicine, as being in vulgar phrase "very cooling for the blood." This we suppose, is to fit the stomach for the heats of Summer. It has long been customary for doctors to prescribe calomel for persons before landing on some tropical coast, to prevent fever incident to regions of a malarian clime.—But experience has proven this to be a practical piece of injudicious nonsense, it having been found, that persons who landed on the coast of Africa without being salivated, generally were not so readily attacked by fever as those who submitted to the mercurial dose.—No person should take physic unless he or she is sick. There are some who take Medicine as regularly as they do their food, and seem to place inestimable value on their apothecary establishments. These people are never well, and never will be while they are in league with that old Serpent "physic" Frequent bathings, good nourishing diet regularly taken, plenty of exercise in the open air, regular hours of sleep, and a cheerful disposition, are the best medicines in the world.

There are some people who think that saw dust bread, (Graham's) is the very thing for health, long life and happiness. Such kind of food unless used with plenty of good meat, is more nourishing to the grave than the human body. As there are a number of people engaged in sedentary occupations it is not possible for them to be often in any other than an ailing condition. They fly to medicine for relief and soon find it in the grave. Those who labor in cotton factories do not breathe the pure atmosphere and are too long confined to daily labor, as the hours of toil in our country are generally admitted by those capable of judging to be more than the human system is well able to bear. This is the reason why so many men engaged in such occupations become invalids after 40 years of age, helped to such a state of physical suffering, no doubt in a great measure by seeking relief at first in medicines, a relief which could only possibly be found in a nourishing diet combined with gentle tonics, instead of treating themselves to cathartic reductions.

One great and common medical error, is to treat the stomach in warm weather with huge tumblers full of soda water or spruce beer to create a "good appetite." Many a man has destroyed his stomach past remedy by soda water. No person requires so much food in warm weather as he does in cold weather, and to doctor the stomach for something which is not a disease, is the sure way to create disease.

Fog Bell.

BOSTON, May 22, 1849.

MESSRS. MUNN & Co.—Allow me to correct you in regard to the new Fog Bell referred to in your paper of last week. The bell is operated substantially by fog—operating in the following manner on the machinery: The apparatus which rings the bell is wound up and detained in a wound state by a lever extending from the machinery into the open air. To the end of this lever is affixed a large sponge, which will absorb the moisture from the fog and by becoming heavy settle down the lever and let the machinery free and thus the bell is rung by fog.

Respectfully, C. B. H.

[We are a little in the *fog* about this bell yet. If the sponge is affixed on the end of the lever in the open air, we must suppose that a shower will be fully as effectual in ringing the bell as the fog will. We can easily see how a dry sponge may absorb moisture from the atmosphere to operate a wire lever by its increased gravity and set free a pall to ring the bell.—Probably the sponge is protected from rain by a cap above, but is free to the influence of the fog or mist. There is another species of fog, however, for which it will not answer, viz. dry fogs. These frequently occur in different parts of the world.—ED.

Astronomical Expedition to Chili.

This expedition for which Congress made an appropriation is to determine the parallex of the planets, by observations on Venus and Mars, made at places situated north and south of the equator.

In order to carry out successfully the objects of the expedition, it is necessary that it should be provided, besides other instruments, with an achromatic telescope which it was supposed could be only obtained in Europe, at an expense beyond the amount of the Government appropriation, the mean sum of $5000. In this emergency Lieut. Gillis applied to the Secretary of the Smithsonian Institute for aid. It was proposed that the Institute should purchase the instruments and loan them to the expedition, on the condition that they were to be returned to the Institute in case Congress refused to appropriate the necessary funds to pay for them. Mr. Secretary Henry and the Executive Committee, considering this a proper occasion for the application of the funds of the Institute to the promotion of science, took immediate steps to procure the instrument. But Importers could not be found to take the order except at an enormous advance on the cost, and Mr. Merz, the successor to Frauenhofer, wrote that a nine-feet equatorial could not be made by the 20th April the time stipulated. Thus matters stood when Mr. Henry Fitz of N. Y. volunteered to make an object-glass from Guinaud's discs of the same dimensions as the somewhat celebrated lens from Frauenhofer's establishment at the High School Observatory in Philadelphia, viz: 6½ inches clear aperture and 9 feet focal length, which should be compared side by side with the object-glass, and if it proved equal to it in performance, he should charge for it only the charge of a similar lens at Munich (about $500), otherwise the Smithsonian Institution should have the use of it, free of charge, until another could be obtained from Germany. And Mr. Wm S. Young of Philadelphia, having already made two equatorial stands of the same size, guaranteed to furnish the mounting within the period stated.

The telescope has been completed and the result is in the highest degree satisfactory. It has been submitted to Prof. Kendall of the Philadelphia High School, and other scientific gentlemen of that city, by whom it has been subjected to a comparison with Frauenhofer's telescope, and their report pronounces the American instrument fully equal to that of the celebrated German manufacturer.

The population of the city of Newark, N. J. is now computed at 32,000.

Dwellings for the Working Classes.

By some of the London papers we perceive that there is an association for "improving the dwellings of the working classes." Prince Albert we believe, is one of the leading men in this enterprise. At Old St. Pancras Road, the society has rented 110 sets of rooms all of which are constantly occupied by respectable persons of various trades and occupations.—The tenants are uniformly satisfied with the extra comforts they obtain by this principle of association—comforts which at the ordinary rate of such accommodation, are well worth double the rent which the association charges, and which rent is consequently paid with remarkable punctuality.

This enterprise is no doubt a philanthropic one and it has been highly commended. Some of our citizens here talk about such an association and in connexion with that to provide cheap baths for the working classes. These things no doubt betray a very admirable spirit, but we do not wish to see the working classes poked into buildings for them exclusively as a matter of charity. We want to see them have good and comfortable houses as a matter of right—the workers should enjoy the fruits of their labors.

Patent Suit.

On Friday last the 19th ult. in the Circuit Court held in this city, Judge Nelson on the bench, there was decided a very interesting case for the infringement of a patent for a machine to manufacture lead pipe, Tatham and others plaintiffs, Lowber and others defendants. The verdict was given for plaintiffs, with estimated damages of $11,934. This is the second trial on this case, the former having been decided against the plaintiffs.

Portable Iron Houses.

Peter Naylor of No. 18 Stone street, this city, has succeeded in constructing houses of the above description, which are both ingenious, and valuable to those about to embark for the "placers." The iron is grooved in such a manner that all parts of the house, roof and sides, slide together, and a house 20 by 15 ft. can be put together in less than one day, and can be packed in a box 9 feet long, 1 foot deep and 2 feet wide, and are furnished at $100.—They are considered much cheaper than wood and far more durable and comfortable. We commend them to the attention of parties about to visit the Gold regions.

Notice.

We would call attention to the advertisement of Mr. T. C. Frye, in this number.

We have had an interview with him, and feel confident that his services will prove valuable to parties requiring the careful management of steam machinery. His letters of credit, are from gentlemen of the highest respectability, and we have no doubt of his qualifications as a practical engineer.

We understand from the American Union, published in Boston, that Messrs. Shegog & Chapin, of Columbia, S. C., have sent to that city one of their improved life preserving Mattresses, an engraving and description of which was published in No. 35 Scientific American. We commend it to the attention of the editors of the Union, and hope they will take the trouble to examine the mattress and give it an Editorial notice. It is certainly worthy of it as many valuable lives might be saved by its use on board of vessels.

Seven physicians of Milwaukee have signed an address which occupies a column of the Daily Wisconsin, exhorting the public to adopt the homeopathic system of treatment in case they are attacked by the Cholera. They refer to the relative success of the true system of homeopathy in Europe in 1831-2.

Our London Patrons.

We are happy in being able to inform our English patrons that such arrangements have been completed with the London Patent Office that the Scientific American may hereafter be found there. Messrs. Barlow & Payne are agents at 89 Chancery Lane, and will receive remittances on account of the Scientific American from those who may desire to subscribe.

Terms—3 dollars per year and postage paid out of the United States.

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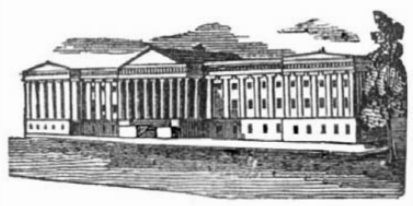

LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending May 22, 1849.

To C. Carter, of Manchester, Michigan, for improvements in Boring and Mortising Machines. Patented May 22, 1849.

To C. S. Beardsley & S. Wood, of New York, for improvement in Bench Planes. Patented May 22, 1849.

To David Smith, of New York City, for improved method of Manufacturing Drop Shot. Patented May 22, 1849.

To T. T. Abbot, of Manchester N. H. for improvement in Speeder Fliers. Patented May 22, 1849.

To W. McCammon, of Albany, N. Y. for Disk Cut-off acted upon and regulated by the Governor. Patented May 22, 1849.

To W. Y. Layton, of Darlington, S. C. for improvement in Cotton Gins. Patented May 22, 1849.

To E. Bancroft, of Philadelphia, Pa., for improvement in Mill Shafting. Patented May 22, 1849.

To J. W. Briggs of Cleveland, Ohio, for improvement in Hames. Patented May 22, 1849.

To W. Chase, of Buffalo, N. Y for method of opening, shutting and fastening Blinds.—Patented May 22, 1849.

To E. Kershaw of Boston, Mass, for improved Key Hole Protector Patented May 22, 1849.

To M. W. Ruthven, of New York City, for improvements in propelling vessels by reaction. Patented May 22, 1949.

To A. Lincoln of Springfield, Ills., for improved method of lifting vessels over shoals. Patented May 22, 1849.

To W. H. Seymour, of Stockton, N. Y. for improvement in Machines for Jointing Staves. Patented May 22, 1849.

To S. W. Davis of Cincinnati Ohio, for improvement in imitations of Marble. Patented May 22, 1849.

To J. Rhoades & W. Pouley, of Shippensburg, Pa, for improvement in Spring Saddles. Patented May 22, 1849.

To J. Laird of Cincinnati, Ohio, for improved Shank for mineral Door Knobs. Patented May 22, 1849.

To D. Sawyer, of Cornish, N. H. for improvement in Scythe nibs. Patented May 22, 1849.

To J. Hinton, of Monroe Co. Va. for improvement in Harvesters of Clover Heads.—Patented May 22, 1849.

To A. J. Purviance of Updegraff, Ohio, for improvement in Harvesting Machines. Patented May 22, 1849.

To H. Todd, of Columbus, Ohio, for improvement in Buckles for Harness. Patented May 22, 1849.

The Oldest Man in America.

The American Bible Society Record for May, says that :

"George Buckhart, living in Harlan County, Ky., is one of the most extraordinary men of the age, and perhaps is the oldest man now known to be living. He is ONE HUNDRED AND FOURTEEN years old; was born in Germantown, Pennsylvania, and has lived for several years in a hollow sycamore tree, of such large dimensions as to contain his family, consisting of a wife and five or six children, bed and bedding, cooking utensils, &c. The exploring agent of the American Bible Society, in his travels in Kentucky, recently found him, and also saw several respectable gentlemen who had spent one or more nights with him in this singular home. He professes to hold the Lutheran faith, being of a German family, and received the Bible with peculiar manifestations of gratitude. What a life for one man to spend! What a long train of events has marked this century through which he has drawn the thread of existence."

By the late news from Europe, the Romans were fighting to keep out the French.

Explosions of Locomotives.

Report on the explosion of the locomotive Piscataqua, read before the Society of Civil Engineers on the 10th ult., by a Committee, Messrs. William Parrot and Simeon Borden, appointed for that purpose. The Report was published in the Boston Traveller of the 16th ult. The explosion of the locomotive took place on the Eastern Railroad, about 2½ miles from the East Boston Depot. The fireman was killed, the engineer slightly wounded and the whole engine shattered to pieces. The engine weighed 9 tons, and was ten years old, but was put in thorough repair two years ago. and supposed to be in good repair at the time of the explosion. The boiler had two pumps and two safety valves, loaded a pressure of 90 pounds. The apparatus for supplying water was in good order, in the opinion of the committee, whose conclusions we here present as being fairly, ably and candidly given, in our opinion, and they will be of no small value and interest to many of our readers.

Having stated the facts in this case as far as they have come to the knowledge of your committee, they submit the following remarks and conclusions for your consideration :

The most remarkable fact is, that the engine exploded while at rest—no aperture open to agitate the water, nor pump at work injecting cold water, nor indication from the safety valves that the boiler was unduly loaded with steam. In most recorded cases of explosion, the accident has occured while the engine was in motion, or just started in motion. The appearance of the tubes and the testimony of the witnesses prove that the boiler was sufficiently supplied with water.

After a careful examination, we are of opinion that the explosion was not to be attributed to the weakness of any part of the boiler ; but the effect was distributed generally over the whole waist ; and that the dark color of the fracture was occasioned from oxidation produced by the heat of the contained steam. All the parts fractured after the explosion were bright.

It is evident that the pressure of the contained steam was greater than the resistance of the boiler, and your committee are of opinion that the iron of which this boiler was constructed was as good as the average of iron in old boilers.

Taking the average strength of old boiler iron, as stated in the report of the committee of the Franklin Institute, Vol. 20, page 107, at 50,000 lbs., and the formula $x = \frac{2Pt}{D} x$ representing the pressure in pounds per square inch sufficient to burst the boiler; P strength of the iron = 50,000 ; t the thickness =0 24 inch ; D the diameter of the boiler, = 36 inches ; and we have x = 666 lbs. per square inch : but as the method of constructing the boilers with rivets reduces this strength, we allow for the reduction, which gives the result of 456 lbs, per square inch, for the actual resistance of the boiler.

Your committee are well aware of the difficulty of arriving at an exact conclusion as to the value of this resistance from this data, as there may have been some parts of the boiler weaker than the strength given by the formula ; and were there not other circumstances beside the simple explosion to guide them they might have doubted that there was so great a pressure of steam. But the fact that after dilligent examination no parts of the boiler were found to indicate weakness or wearing away of the plates more than has been allowed for in the formula ; the discolored appearance for the fracture indicating a heat not less than 400° Fahrenheit ; the heated appearance of the plates themselves, the great distance to which some of the parts were thrown—all indicate a great and undue pressure of steam in this boiler.

We therefore conclude, that at the time the explosion took place, this boiler was subjected to an internal pressure of steam of not much if any less than 450 lbs. to the square inch, and a temperature of 357°; and that this extraordinary pressure was occasioned by an accumulation of steam in consequence of the safety valves being hindered in their free action.

Whether this obstruction was occasioned by carelessness, or by some defect in the construction of the balances, your committee are unable to state, as they had no evidence which could be conclusive in the matter. But from comparison with other balances, said to have been similar, it was evident that a very little carelessness in screwing down the lever would render the safety valve useless; and this carelessness or inadvertency your committee are of the opinion, was the cause of this explosion. They would therefore suggest the adoption of the practical rule, that when the safety valves are loaded by means of a lever and spring balance, they should be so constructed as to render it imposible to screw down the balance beyond the limit of pressure fixed by the builder or the superintendent of the engines.

WM. P. PARROTT, } Committee.
SIMEON BORDEN, }

For the Scientific American.

Principle of Patents.—Action of Patent Office.

The writer of this has carefully perused the Prize Essay of Mr. Maher. He cordially agrees with him on some points, but not on others.—It is not his intention, however, to discuss the matter, but to take a brief view of our whole patent system and practice—to point out evils, recommend improvements and impart some knowledge, which, he humbly thinks, will be both useful and interesting to inventors and the public in general.

The whole principle of the Patent Laws lies in a nutshell. It consists in the public granting an exclusive authority to an inventor or discoverer for fourteen years to make, use, and vend his invention or discovery, upon the condition that the public will enjoy the benefits of the same after the period stated. The policy of such a law or laws, is unquestionable. Before governments were wise enough to adopt such a system, the progress of scientific and especially mechanical discovery, was very slow. This is the reason why we have so many traditions of ancient arts lost. The discoverer or inventor in ancient times preferred to enjoy the benefits of his discovery by keeping the same a perfect secret. Inventors of the olden time carried their secrets to the grave with them. From the moment the government of England established Patent Protection to Inventors, physical science has progressed with astonishing rapidity. This then is evidence of the wisdom and sound policy of Patent Protection.

The first thing therefore to be learned in examining an application for a patent, is its originality and usefulness. On the latter point there need not be much said, for an utterly worthless thing will soon find its own level, and there are but few who can really decide upon the usefulness of an invention. "The proof of the pudding is the eating of it," and the only question in this case should be, is it new or old ? Our best inventions and discoveries have been subjects of sport to professional wise men. When Franklin's experiments and views on electricity were read before the Royal Society, they were received with shouts of laughter by the wise savans composing that time honored body. If there is evidence produced of a new result or an old result in a new and more economical manner the shield of Patent Protection should at once be thrown before it, to guard it against the malicious intrigues of selfish and unprincipled men.

The principle of action which should guide the Patent Office should be transparent on this point, in order that inventors and the public might know how to proceed without any doubts of success, or any unnecessary expense. Hitherto the action of our Patent Office has not been uniform in this respect. It has rejected applications with the reason given, "want of novelty," when there was both novelty and usefulness combined in the invention. It has rejected hundreds of applications for patents, upon the grounds that "a mere difference of application did not constitute a patentable object," while it has granted patents to some for the mere application of an article to a new purpose. How this was done, the reasons why it was done, is something that requires explanation and the public would not be the worse of having the mist removed from their eyes. Does one man who applies for a patent pay more than another into the Treasury of the United States? No. It could not then be for the special tax paid there, that such favors were bestowed upon the blessed few to the prejudice of the rebuffed many. None would like to attribute either influence or corruption to any board of men but would attribute their crooked action either to carelessness, ignorance, or to that kind of action so strikingly pourtrayed in the parable of "the unjust steward." On the 17th of last April a patent was granted to S. L. Croker, of Taunton, Mass., for the application of Muntz's metal—(a British invention,) for making cut nails. No claim was set up for a new metal or alloy, or a new way of producing an old result. No, none of these, but this, "what I claim as my invention is the new article of manufacture herein above described, viz. a yellow metal nail made by cutting and heading it in a nail machine, meaning by the term yellow metal, a metal composed of copper and zinc, in the proportions in which they are usually combined in the manufacture of the well known Muntz sheathing metal."

When the Patent Office grants a patent for a brass nail in 1849, there can be no doubt but many rejected inventions mutter their complaints to the walls of the Model Room, "on us such favors have not been bestowed."

JUNIUS REDIVIVUS.

[Having mentioned in No. 33, that we had some articles sent us by "Junius Redivivus," which we designed to publish at some future time, that gentleman sent us a note requesting us to suspend their publication and he would send us some other articles that would be more suitable to our columns, to follow after the Prize Essay. This article is the first of of a series which he has sent us.—ED.

Sir John Franklin's Ezpedition.

Capt. Wilkes, of the Navy, publishes a letter in the National Intelligencer in relation to the contemplated expedition in search of Sir John Franklin, the British navigator. Capt. Wilkes entertains the hope that it is not yet too late to render relief, and suggests that prompt action may be the means of saving Sir John and his brave followers from a terrible fate. He is of opinion that the search should be made through the Wellington Channel, it being the only point where adequate search is not likely to be made. Beyond Cape Walker towards the south-west, in Baffin's Bay, in Davis's Straits, in Lancaster Sound, or in the Arctic Ocean within Behrring's Straits, he would most likely be fallen in with by Richardson or Ross, both of whom are in search of him, or by the English, Russian, or American whale ships, which have extended their cruising grounds in those remote parts. The writer remarks :

The best practical plan, peculiarly suited to our means and the character of the navigation and service, is to fit out three or four of our small Eastern fishing vessels, (Chebacco boats,) from sixty to eighty or one hundred tons burthen, manned by those who have been brought up in them, and have them well and fully equipped, with but small crews, ten or twelve persons, including officers. For this number these vessels could be provided with fuel, provisions, and clothing for two or three seasons. There is no necessity for them to set out with the intention of wintering within the icy region ; the supplies should be to guard against accident of detention. The vessels and outfit could be readily prepared for five or seven thousand dollars each, and crews would cheerfully undertake the voyage at double wages and a gratuitous supply of warm clothing; the whole sum would not exceed for these $25,000. The reward offered by the British Government, in the event of success, would be ample compensation to excite the greatest exertion, casting aside the desire of adventure and engaging in so laudable an undertaking.

The distance of Wellington Channel from our shores is not greater than that to Europe, and the voyage may readily be performed in forty-five days.

If (says the letter) vessels were now fitted they would be in time for the season, which opens about the middle of July, and would be able to explore this channel thoroughly to its farthest extent or navigable point, and, if not to succor, they will ascertain whether Sir John Franklin had taken that route, and return safely back before winter with tidings.

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TO CORRESPONDENTS.

"I. P. F. of Ala."—You had better construct a model of your Cotton Press and forward it to this office. We are not able to gain a sufficient knowledge of its novelty from your description. Make the model as small as convenient and let it represent the construction and operation of the press.

"D. A. W. of N. Y."—It is scarcely possible to understand clearly your improvement on the valve, owing to the drawings and description being so crowded together. But it is not possible without a great deal of research to tell how many patents have been granted for valves and the various modes of constructing and operating them. More than 200 patents have been issued for improvements on the steam engine. The patent fee would cost $30 and the rest would only be the expense for drawings and specification. If there is not much work to be done, the cost will be the less..

"A. G. H. of Great Falls."—We can furnish you with the receipt commonly used for that purpose.

"A. A. W. of Mich."—Your favor of the 14th with enclosure came safe to hand. For drawings of a wheel similar to yours, see Galloway's History and Progress of the Steam Engine, page 482. It is not possible for you to get a patent, and we have used the papers which you sent us according to that decision. The money has not reached us yet, but when it does it shall be passed to your credit subject to your order. The French work to which we referred you is large and expensive and we presume not to be found in your city, but the one above (Galloway's) is a common work and no doubt can be found with you.

"B. A. of N. C."—$4 received, and your requests properly attended to.

"L. B. of Ala."—The plan of your plough differs from any that we have seen or heard of before. We do not see clearly from your description and drawing where the particular advantage and saving of power lies. We would be better able to judge from a good model.

"T. B. of N. Y."—We will get up an engraving of your Governor soon.

"J. H. of Geo."—Your communication on the square of cells, has been put into the Post Office, directed to C. P. N.

"W. M. of N. Y."—Your article on the Ten Hour System, will appear next week.

"T. J. K. of Va."—We hope you will get your paper regular. It always was sent promptly and the fault was in the P. O. There is no Tidal Mill belonging to any person that we could recommend. Mr. W. Sherrod, of Providence, R. I. is the inventor of a very good one.

"J. A. T. of Mass."—Such a work as you refer to has never been published. The list is published every week in the Scientific American, furnished direct from the Patent Office.

"J. J. C. of Va."—We cannot answer your enquiries satisfactorily. You had better enclose $5 in a letter and address it to Messrs. Lyon, Short & Co at that place and we presume they will furnish you the particulars.—We do not know that they are in this kind of business, but know them to be business men.

"J. W S. of Mass."—You appear to have hit upon a capital Electro Magnetic Rotary Engine. There is something about electro magnetism, however, which seems too subtle to be condensed into a powerful moter. Experiment alone—plain practical results—are the only criterion of utility. Many eminent men have entered upon this field and have left no trace of their labors. Why? Because they were unsuccessful. We are dubious about the beneficial results for which Congress made the appropriation. We desire to be disappointed.

"J. D. W. of Ct."—In the year 1845 Mr. Trapp resided in Dryden, N. Y. Since that time we have had no tidings of him, but presume he still resides there. Justice shall be done you.

"A. C. B. of N. C."—The error of which you advised us in your favor of the 13th, was made by Mr. Farnum in rendering his account to us. The $5 has been since paid and placed to your credit.

"J. H. P. of Me."—We thank you for that encouraging letter, and the fine list of subscribers. We shall answer your questions by mail on Monday, and will furnish all the information you require. We could not give it in the columns of the "Scientific American." We have forwarded several specimens as per request, and hope to hear a good account from them.

"H. O. R. of Ala."—Messrs. Norcross & Co. shipped your machinery on the 28th, as per directions. We shall attend to your other matters without delay. You must bear with us a little, as we are very much driven with business. We receive a mass of communications every day and we never design to overlook any. We often are put to much trouble in obtaining such facts as our correspondents require, but we are always ready and willing.

"D. F. of N. Y."—It is probable that you could obtain letters patent for your improvement. You had better send us a drawing or model as soon as possible for examination.—The machine referred to has been disposed of and we do not know where another could be purchased. $2 received and credited for 1 year's subscription.

"M. M. B. of N. J." "A. P. C. and R. C. of Mass." "N. S. T. of Ct." "W. N. F. of N. H." and "C. T. D. of Vt."—Your specifications and drawings have been forwarded to the Patent Office since our last issue.

"D. J. S. of N. Y."—Too late to examine this week.

"E. C. of Ct."—There have been attempts made to re-use the steam, over and over again in the form of steam, and the heated air engine always returns its air and uses it over again. We are not able to give the information requested in your second interrogation.

"J. J. & C. of Mass."—Yours has just come to hand.

"H. M. of N. Y."—Yours next week.

"G. A. I. of Ky"—$20 was received from the Patent Office last Monday and placed to your credit.

We have quite a number of answers to correspondents left out this week.

Advertisements.

MACHINERY.

THE undersigned have made such arrangements with Foundries, Machinists and Patentees, that they are prepared to furnish all kinds of machinery or mechanical tools at manufacturers prices. Steam Engines of any power, Horse power, Lathes, Mills of all kinds, Presses, Planing & Shingle machines, Mill and circular Saws, and every kind of machine or Tool, used by a mechanic or manufacturer. Also a lot of second hand machinery for sale low.

N. B. Our personal attention given to forwarding and packing. NORCROSS & CO. 60 Nassau st.

TO SOUTHERN AND WESTERN MANUFACTURERS.

THE undersigned having completed his engagement with the Bay State Mills at Lawrence Mass. is now prepared to negociate with parties for a situation as practical engineer and superintendent of machinery. Strong letters of recommendation can be furnished from Samuel Lawrence, Esq., Messrs. Aldrich, Tyng & Co. of Lowell, and several other gentlemen of high standing. Letters addressed to me at Andover, Mass. will meet prompt attention.

j2 6t* T. C. FRYE.

TO MEN OF ENTERPRISE.

THE undersigned, being the sole proprietor of the French, Belgian, Dutch, Prussian, Austrian, and Russian Patents, for Messrs. WEST & THOMPSON'S celebrated "CLASP COUPLING JOINT," the most valuable invention of the present age, is now ready to dispose of one or more of the said Patents, on such terms as to insure to the purchasers certain and rapid fortunes, The French, Belgian and Dutch Patents are granted for the term of FIFTEEN years each the Prussian, Austrian and Russian Patents for shorter periods.

Gentleman are invited to call and investigate the subject for themselves. All information will be cheerfully furnished, on application to

CLINTON G. GILROY, Tribune Buildings.

P. S. A few valuable "STATE RIGHTS" of the American Patent may yet be had of the subscribers. Letters must be postpaid j2 1t

A NEW PATENT MACHINE.

HAVING obtained a patent for a self-feeding machine to saw wood TWICE IN TWO at one operation, a model of which can be seen by applying to P. H. Watson, Patent Attorney, Washington, D. C I am now prepared to sell the right for the same, by States or smaller districts, as may best suit the convenience of purchasers. As this is a machine every where wanted, and believed to possess superior merit, it will be to the advantage of mechanics and patent dealers to attend to it.

All communications post paid, and addressed to the subscriber, will receive prompt attention.

DAVID BONNER,
j2 8t* Greenfield, Highland County, Ohio.

TO IRON FOUNDERS.

FINE ground Sea Coal, an approved article to make the sand come off the Castings easily; fine bolted Charcoal Blaacking; Lehigh fine Dust, and Soapstone Dust for facing Stove Plates, &c. &c.; also, Black Lead Dust, for sale in Barrels, by

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Carriage Axle Grease.

Dissolve 60 lbs. of soda in 40 gallons of water. Then introduce into a boiler 40 lbs. of palm oil and 149 lbs. of tallow and allow this mixture to boil. Then take away the fire and gradually cool down, stirring frequently, to blood heat (98°.) When cooled down to this heat it should be run through a sieve into the cooler vessel containing the dissolved soda, and stirring it during the whole time it is running off to mix the soda and oils properly. This makes a kind of soap which has been found to answer an excellent purpose as an anti-friction grease, and those companies who use a great deal of lubricating material will find it to be both cheap and good. For fine machinery where pure oil alone is desired to be used, any common oil may very easily be purified for that purpose by treating it with some soda and bringing up to a heat of 212°, then cooling off, allowing the sediment to settle, and then using the clear. The soda combines with the acid in the oil, forming a neutral salt and thus purifying the oil, making it suitable to use with the highest polished iron.

There is a kind of anti-friction grease now beginning to be extensively used in this city, and the manufacture of which is kept somewhat secret. The grease is made from rosin by a process discovered by a young man recently from the North of Ireland, who introtroduced it into this city, and has been employed by Messrs. Rogers to manufacture it.

Fusible Metal, or Metallic Pencils.

When bismuth is added to a mixture of lead and tin, it causes them to melt with a very low degree of heat. Equal quantities of these three metals may be melted in a bit of paper over a candle, without burning it; but the mixture that melts with the smallest heat, is that of 8 oz. of bismuth, 5 oz. of lead, and 3 oz. of tin, which melts at 202 deg. Fahrenheit. Hence toy spoons are made of them, which being given to children to stir very hot tea, melt while they are using them. Parkes has proposed the use of these compounds of lead and tin, with or without bismuth, in certain proportions, to form metallic baths, in which cutlery may be immersed for the purpose of tempering it always at the same precise temperature.

Another use of this fusible alloy, as it is called, is for making metallic pencils to write upon paper, prepared by having burnt hartshorn well rubbed upon it. The marks are as fine as those of black lead pencil, and not so easily rubbed out. Memorandum books of this kind are very convenient, being equally ready for use with black lead pencils, and yet as permanent as ink.

Norwegian Water Telescope.

An instrument which the people of Norway have found of so great utility, there is scarcely a single fishing boat without one, is the water Telescope or tube, of three or four feet in length, which they carry in their boats with them when they go a fishing. When they reach the fishing ground, they immerse one end of this telescope in the water, and look through the glass, which shows objects some ten or fifteen fathoms deep as distinctly as if they were within a foot of the surface; by which means when a shoal of fish comes into their bays, the Norwegians instantly prepare their nets, man their boats, and go out in pursuit. The first process is minutely to survey the ground with their glasses, and where they find the fish swarming about in great numbers, then they give the signal, and surround the fish with their large draught net, and often catch them in hundreds at a haul.—Without these telescopes their business would often prove precarious and unprofitable, as the fish, by these glasses, are as distinctly seen in the deep clear sea of Norway as gold fish, in a crystal jar. This instrument is not only used by the fishermen, but it is also found aboard the navy and coasting vessels of Norway.—When the anchors get into foul ground or their cables warped on a roadstead, they immediately apply the glass, and, guided by it, take steps to put to rights, which they could not do so well without the aid of the rude and simple instrument, which the meanest fisherman can make up with his own hands, without the aid of a craftsman. This instrument has been lately adopted by the Scotch fishermen on the Tay, and by its assistance they have been enabled to discover stones, holes, and uneven ground, over which their nets travel, and have found the telescope answer to admiration—the minutest object in twelve feet water being as clearly seen as if on the surface.

To Make Shaker Butter.

The pans or other vessels in which the milk is to be set should be made perfectly sweet. A room in the basement story where the air will circulate freely in preferable to a cellar (when the weather will admit of it) for setting milk. Forty eight hours is a sufficient length of time to raise cream for making butter to keep through the winter season.

After this cream is taken off, the milk may stand the same length of time, but the cream that rises will not make butter so palatable as the first which rises, and should be churned separate.

When the cream is taken from the milk, it should be put into a tin pail and set into a kettle of scalding water, taking care to stir the cream often, otherwise it will turn oily on the top; it should remain in the kettle till the cream is scalding hot, being particular to place it in a tub of cold water immediately. Stir it often till it is quite cold; if it remains long after hot, it will be injured much. It will be necessary to change the water once or twice before the cream can be perfectly cold. It may then be kept three or four days before churning, without injury.

After churning, the buttermilk should be partially worked out; then add one and one half ounces of salt to one pound of butter. It may then be covered tight and stand till the following day; then work it over again, taking great care to work out every article of buttermilk, which will prevent the butter from growing rancid by age. It may then be formed into cakes or packed solid in a cask which should be perfectly sweet and well dried.

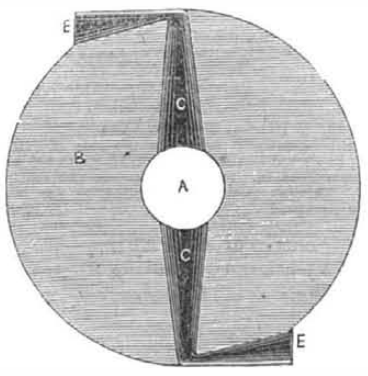
The inside should be sprinkled and a little fine salt rubbed thereon. After the cask is filled, dip a cloth in melted butter, and spread it snugly over the top—cover it over with fine salt, and fasten up the cask sufficiently tight to keep out the air; it should then be set in a cool place to remain through the winter.

History of the Rotary Engine.

Prepared expressly for the Scientific American.

MILE'S ROTARY ENGINE.

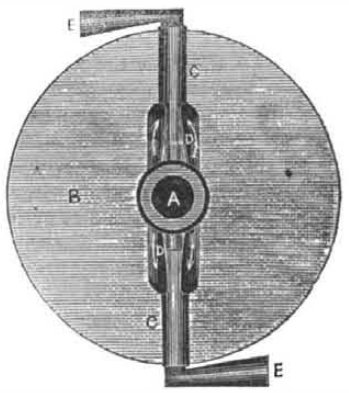
FIG. 1.



This rotary engine is the invention of C. M. Miles, of Brockwayville, Pa, and it embraces a curious mode of reversing the motion, otherwise it is upon the principle of Hero's or the Barker Rotary Mill, with the exception of having the outlet orifices very narrow at the tangential points, gradually flaring outwards.

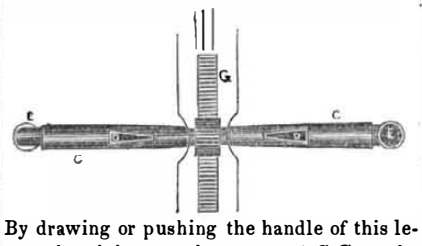
Figures 1 and 2 are vertical sections, and fig. 3 is a vertical end section. The same letters of reference indicate like parts on all the figures. A, is the hollow axle on which the wheel engine revolves and through which the steam is admitted, C C, are the tubes through which the steam passes to exhaust at E E.—The steam being admitted through A, it passes through a small space between the plates B B, into the slits D D, figs. 2 and 3, into the tube C C, and gives the reactive motion to the steam wheel, or rotary engine. The plates B B, are cast solid and their inner faces ground

FIG. 2.



smoothly so as to be perfectly air tight. There is a space drilled out for the tubes C C, which set into it like a journal box. On the centre of the tubes C C, inside of the hollow axle A, there is a small pinion forming part of it. Into this pinion there meshes a rack which is cut upon a lever the handle of which passes through the axle and extends outside.—

FIG. 3.



By drawing or pushing the handle of this lever, the pinion on the centre of C C, at the interior of the hollow axle, is turned round, and consequently the tubes C C, also, thus reversing the position of E E, the exit tubes.—Fig. 3 shows this arrangement. G, is the rack lever represented as meshing into the small tube pinion.

Effects of Poison.

Substances which are highly deleterious, and even immediately fatal to one species of animals, are frequently not so to others.

In certain cases, in fact, articles that are extremely beneficial in their effects upon one kind of animals, are medicinal to others, and to others even nutritive.

Thus Hogs are destroyed by pepper seeds, while the same substance is highly prized by man as a grateful and salutary spice. On the contrary the roots of the common henbane, which operate as a virulent and fatal poison to the human species, are a serviceable food for swine.

Aloes, also, which constitute so valuable an article in the meteria medica of our physicians, and which is so beneficially applied in many diseases incident to the human system, proves a rank poison to the fox and dog. The horse, which is almost immediately destroyed by the phelandium aquaticum, or common water hemlock, and corrosive sublimate, even when administered in small quantities, nevertheless takes a drachm of arsenic daily, but prussic acid poisons all breathing animals.

Magnetic Power of Mineral Substances.

It appears from the researches of M. Delisse that the magnetic powers of the mineral substances which compose the crust of the globe varies according to their relative richness in iron manganese, cerium, &c, or the magnetic metals. On the other hand, it diminishes in proportion as they contain a greater quantity of silica, alumina, lime, fluor, &c.; that is to say, of substances in which the magnetic action is either null or very feeble—whilst, on the contrary, the diamagnetic action predominates. All the silicated or non-silicated minerals in which the iron is present in the state of oxide, which have a high magnetic power, contain at the same time protoxide and sesqui-oxide of iron; but the converse does not always hold good. The minerals which readily become electric by heat, such as the tourmaline, &c., which have magnetic substances combined with them, possess a very slight magnetic power, and which appears to depend only on the proportion of the magnetic substances. The electric and magnetic properties of a mineral thus appear to be independent the one of the other.

LITERARY NOTICES.

The American Locomotive.

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Sartain's Union Magazine for June has been sent us by Messrs. Dewitt & Davenport, of this city. It is illustrated with several excellent engravings and a colored plate of Fashions. The contributors to this number are Tuckerman, Willis, Herbert, Greenleaf, Mrs. Sigourney and Mrs. Kirtland, and several others of known reputation. Sartain cannot be outdone.

Peterson's Magazine has three pretty engravings and the usual variety of choice reading. The June number completes the present volume and this is a favorable time to subscribe. The publisher promises well for the future, and his readers may depend upon being served accordingly.

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